UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

June 26, 2002

Reply To
Attn Of: ECL-113

Commander, Ft. Lewis *(sent via e-mail and regular mail)*
Directorate of Public Works
ATTN: AFZH-DEQ MS 17 (Mr. Eric Waehling)
Building 2012, Room 323
Ft. Lewis, WA 98433-9500

Subject: Review of Letter Report: Slug Tests of Six monitoring Wells, Landfill 4-Demo Area 1, Camp Bonneville, dated May 2002

Dear Eric:

Please find EPA's comments on the subject report enclosed. Let me know if you have any questions or concerns at (206) 553-1220.

Sincerely,

Sean Sheldrake, Project Manager

Enclosure

cc: Rodney Taie, USACE
Ben Forson, Ecology

Enclosure: Review of Letter Report: Slug Tests of Six monitoring Wells, Landfill 4-Demo Area 1, Camp Bonneville.

Section 2.4, Page 2-4. The text states that an effective porosity of 0.40 for silt and clay was used in the groundwater velocity calculations for wells constructed in the alluvial soils. The text also states that the estimated velocities for the weathered bedrock were calculated using the hydraulic conductivities obtained from the Bouwer and Rice and Cooper et. al. analyses. Please state whether the same effective porosity assumed for the alluvial soils was also used to calculate the velocities in the weathered bedrock. The use of a lower effective porosity value, ie for silt and clay, would underestimate the groundwater velocity for more potentially porous formations such as the weathered bedrock.

The bedrock formation is most likely comprised of one or more weathered silty layers but also is likely to have zones that are comprised of more coarse grained material with a higher effective porosity. The groundwater velocity estimates should include an evaluation of the potential impact of the presence of higher porosity zones within the bedrock and the effect such zones would have on the calculated groundwater velocity estimates.

Section 2.4, Page 2-4, Last Paragraph. The data for well L4-MW01B in Appendix A does exhibit two distinct response rates with corresponding slopes as discussed in the text. In the opinion of Gannett Fleming, the use of manual curve fit for evaluation of the data was justified and resulted in similar groundwater velocity estimates as the data from the other two deep wells.

The velocity and conductivity estimates made for these wells appear to be reasonable based on the change in ground water elevations vs. elapsed time data collected during the aquifer tests. An upper bounds estimate should be calculated, however, based on the potential presence of more coarse grained material than silt and clay within the weathered bedrock.